

COMPUTER APPLICATIONS
Course Structure – at a Glance

CODE	COURSE TITLE	CREDITS
MCA 501	Computers Fundamentals and Programming	2+1
MCA 502	Introduction to Networking and Internet Applications	1+1

Objective

This course builds an understanding of the structure of computers, execution of programmes, data representation and computer arithmetic. The course also provides exposure to developing problem-solving strategies, techniques and skills.

Theory**UNIT I**

Computer Fundamentals - Number systems: decimal, octal, binary and hexadecimal; Representation of integers, fixed and floating point numbers, character representation; ASCII, EBCDIC.

UNIT II

Functional units of computer: I/O devices, primary and secondary memories.

UNIT III

Programming fundamentals with C - Algorithm, techniques of problem solving, flowcharting, stepwise refinement; Representation of integer, character, real, data types; Constants and variables; Arithmetic expressions, assignment statement, logical expression.

UNIT IV

Sequencing, alteration and iteration; Arrays, string processing.

UNIT V

Sub-programs, recursion, pointers and files

UNIT VI

Program correctness, Debugging and testing of programs

Practical

Conversion of different number types; Creation of flow chart, conversion of algorithm/flowchart to program; Mathematical operators, operator precedence; Sequence, control and iteration; Arrays and string processing; Pointers and File processing.

References

Balaguruswamy E. 1998. *Programming with ANSI C*. Tata McGraw Hill.

Gottfried B. 1999. *Programming with C, Schaum Outline Series*. Tata McGraw Hill.

Kanetkar Y. 1999. *Let Us C*. BPB Publ.

Malvino AP & Brown JA. 1999. *Digital Computer Electronics*. Tata McGraw Hill.

Mano MM. 1999. *Digital Logic and Computer Design*. Prentice Hall of India.

Objective

The course is aimed at providing fundamentals of networking and application protocols with emphasis on web based applications.

Theory**UNIT I**

Networking fundamentals, types of networking, network topology; Introduction to File Transfer Protocol (FTP), Telnet, Simple Mail Transfer Protocol (SMTP)

UNIT II

World Wide Web (WWW), working with Internet; Web pages, web sites, web servers; Web Applications

UNIT III

Hyper Text Markup Language (HTML), DHTML, web based application development.

Practical

Network and mail configuration; Using Network Services; Browsing of Internet; Creation of web pages; Creation of websites using HTML and Creation of websites using DHTML.

References

Buyens J. 2002. *Microsoft FrontPage -Inside Out*. Microsoft Press.

Cox V, Wermers L & Reding EE. 2006. *HTML Illustrated Complete*. 3rd Ed. Course Technology.

Niederst J. 2001. *Web Design in a Nutshell*. O'Reilly Media.

Tanenbaum AS. 2003. *Computer Networks*. Prentice Hall of India.